

ABSTRACT

A rocket includes: 1) an air-breathing external combustion rocket engine including: a fuel tank configured to contain a fuel combustible with air; a working medium tank configured to contain a working medium; a combustor connected to the fuel tank and configured to combust the fuel with air to form a hot product gas; a heat exchanger connected to the combustor and configured to heat the working medium with the hot product gas via heat conducting walls of the heat exchanger so as to generate a high-energy working medium having a high pressure; and a nozzle connected to at least one of the working medium tank and the heat exchanger and configured to expand the high-energy working medium so as to generate thrust; and 2) accommodations for a human passenger sufficient to allow the human passenger to fly on the rocket.